

We are looking to support our rapidly growing team as soon as possible:

Postdoctoral Fellow in Computational Cancer Evolution (f/m/x)

Department I of Internal Medicine - CECAD

TV-L: 38,5 h/week (100%)

Fixed-term for three years in accordance with the German Academic Fixed-Term Contract Act (WissZeitVG) within a third-party funded project
with the possibility of extension subject to the availability of project funding

Your salary will be based on TV-L pay grade E13

Your tasks

We are looking for an ambitious postdoctoral researcher with a proven track record in computational cancer evolution to join our Integrated Cancer Research Laboratory at the CECAD Research Center in Cologne. In this role, you will reconstruct the clonal and subclonal architecture of chronic lymphocytic leukemia (CLL) and track its evolution under targeted therapies. Using bulk and single-cell sequencing data, you will infer tumour phylogenies and quantify intratumour heterogeneity, subclonal selection and genomic instability (e.g. copy-number alterations, whole-genome doubling and chromothripsis).

You will identify evolutionary trajectories leading to treatment resistance, relapse and Richter transformation. Furthermore, you will develop and apply computational methods based on evolutionary principles and integrate genomic, transcriptomic and spatial data with clinical outcomes. Your analyses will link evolutionary features to treatment response, MRD kinetics and survival.

For this work, the lab has access to blood and bone

Your future with us

We are one of the leading university hospitals in Germany and network research, teaching and health care at the highest level. That's why many things are a lot bigger for us: the spectrum of exciting development opportunities. The limitless openness with which specialists from all over the world work together here. Or our commitment as an employer to support all employees as best we can in reconciling their job with their goals and life situations.

This is the University Hospital of Cologne: Everything but ordinary.

Your future in detail

The Integrated Cancer Research Laboratory (www.al-sawaf-lab.com), led by Prof Othman Al-Sawaf and based at the CECAD and Department I of Internal Medicine, was founded in 2024 and is funded by a large Emmy-Noether-Grant of the German Research Council (DFG). The focus of the lab is to integrate multimodal analyses to study the plasticity, evolution

marrow samples from more than 900 patients with CLL treated within prospective clinical trials of the German CLL Study Group (GCLLSG), including samples taken before treatment and at relapse, linked to detailed clinical and measurable residual disease (MRD) data.

You will lead your own projects, contribute to collaborative projects within the lab and with external partners, and co-supervise PhD and Master students.

Your profile

- A PhD in bioinformatics, computational biology, statistics, physics, computer science or a related field
- A proven track record in computational cancer evolution, demonstrated by first-author publications
- Hands-on experience in reconstructing clonal and subclonal tumour evolution from sequencing data (e.g. clonal deconvolution, phylogenetic inference, mutational signatures)
- Experience in copy-number and structural variant analysis from whole-genome or whole-exome sequencing data; experience with single-cell DNA or RNA sequencing data is a plus
- Fluency in Python and/or R, and experience with reproducible workflows (e.g. Snakemake, Nextflow) on high performance computing clusters
- Experience with longitudinal or clinical trial data and with haematological malignancies is a plus
- Ability to work independently and in close collaboration with clinicians and wet-lab scientists
- Excellent communication skills in English, both written and spoken

Our offer

- **Everything but ordinary:** You can expect a secure job in a challenging, innovative environment – including company pension schemes and regular working hours without business trips.
- **Work-life balance:** Whether full-time or part-time, with or without children – with numerous support options, we will find the right path together.
- **Team spirit in R(h)ine culture:** You will be warmly welcomed by an interdisciplinary team that values mutual respect and helpfulness.
- **Strong perspectives:** We offer extensive training opportunities – so you can continuously grow and set new goals.

and prognosis of cancer with a special focus on hematological malignancies. To this end, the lab utilizes a unique biobank with blood and bone marrow samples from patients treated within large (>900 patients) prospective clinical trials. The group is embedded in a network with many local collaborators, including the Collaborative Research Center (CRC) 1530 and the German CLL Study Group (GCLLSG), as well as many national and international partners in academia and industry. Previous work has been frequently cited (Al-Sawaf et al, N Engl J Med 2025; Al-Sawaf et al, Nature Medicine 2024; Al-Sawaf et al, Nature Medicine 2023; see Pubmed) and the aim of the lab is to continue producing highly impactful and patient-relevant results.

Applications from female candidates are expressly welcome and will be given priority in the event of equal suitability, competence and professional performance. People with disabilities are welcome to apply and will be treated preferentially in the event of equal suitability and qualification. The position is suitable for staffing with part-time employees.

Contact

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Application deadline: 29 November 2026

Job-ID: 3ftptfct

apply now

We look forward to receiving your application and getting to know you!